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EXAMINER	
SHIN, KYUNG H	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/071,035	RUPP ET AL.	
	Examiner	Art Unit	
	Kyung H Shin	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *1-11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/8/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responding to application papers filed 2/8/2002 with Foreign priority 8/20/1999.

2. Claims **1 - 11** are pending. Independent claims are **1, 7**.

Claim Rejection - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 - 6, 9 - 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson et al. (US Patent No. 6,738,388: filed Sep. 10, 1998) in view of Gretta et al. (US Patent No. 6,141,596: filed July 8, 1999) and further in view of Eryurek et al. (US Patent No. 6,397,114: filed May 3, 1999).

Regarding Claim 1, Stevenson discloses at least one subscriber connected to a fieldbus which is suitable to control safety-critical processes, wherein

c) in a third phase the subscriber/subscribers log on again at the central unit with a higher data transmission rate; (see Stevenson col. 25, lines 22-24;

col. 8, lines 53-60: initiate subscriber link (i.e. log on), second (i.e. higher) data transmission rate configured)

a) Stevenson discloses in a first phase the subscriber/subscribers (see Stevenson col. 8, lines 53-60: subscribers access fieldbus process control system) centrally connected to the fieldbus (see Stevenson col. 6, lines 42-48: central fieldbus controller) with one of at least two data transmission rate. (see Stevenson col. 8, lines 53-60: at least two available data transmission speeds) Stevenson does not disclose adjustment to a first low data transmission rate.

However, Gretta discloses fieldbus connection at a first low data transmission rate; (see **Gretta** col. 4, lines 5-9; col. 4, lines 24-27: set first (i.e. low) data rate for fieldbus system, configured utilizing configuration information)

b) Stevenson discloses in a second phase the subscriber/subscribers access fieldbus system with at least two data transmission rates (see Stevenson col. 25, lines 22-24; col. 8, lines 53-60: subscribers access fieldbus system, data transmission rates) Stevenson does not disclose adjustment to a predetermined higher second data transmission rate.

However, Gretta discloses adjusting a fieldbus connection to a higher second data transmission rate; (see **Gretta** col. 4, lines 12-21; col. 4, lines 24-27: set second (i.e. higher) data transmission rate for fieldbus system, configured utilizing configuration information)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stevenson to set data transmission rates as taught by Gretta. One of ordinary skill in the art would be motivated to employ Gretta in order to provide an improved user interface and simplified development for fieldbus system. (see **Gretta** col. 3, lines 34-36: *" ... fieldbus configuration utility ... provides an improved user interface and simplified development ... "*)

d) Stevenson discloses a central unit fieldbus system with event (i.e. threshold parameter) management and the capability to detect a deviation of the number of subscribers logged on in the first and the third phase. (see Stevenson col. 3, lines 13-17; col. 10, lines 11-13: fieldbus system, event management). Stevenson does not disclose a shutdown procedure.

However, Eryurek discloses the capability to shut down the fieldbus system. (see **Eryurek** col. 1, lines 46-47; col. 7, lines 31-35; col. 9, lines 27-29: process control system, shutdown procedure when threshold parameters are met)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stevenson to utilize a shutdown procedure when pre-determined conditions are met as taught by Eryurek. One of ordinary skill in the art would be motivated to employ Eryurek in order to implement event driven conditions utilizing complex models within

a process control environment with limited power and resources. (see **Eryurek** col. 1, lines 39-43: *" ... identify what event triggered the alarm ... use complex models ... implement in a process environment where there is limited power and resources for large computations ... "*)

Regarding Claim 2, Stevenson discloses method according to claim 1, wherein the first phase is started with switching on the fieldbus system. (see Stevenson col. 8, lines 38-41: fieldbus system supplies power to devices, devices powered-on when fieldbus system initiated)

Regarding Claim 3, Stevenson discloses method according to claim 1, wherein in the second phase the central unit transmits data telegrams to all subscribers, the data telegrams comprising the instruction to switch the data transmission rate to the second value. (see Stevenson col. 12, lines 18-24; col. 26, lines 31-38: publisher/subscriber messages (i.e. data telegrams) utilized for communications (including commands- switch data rate) between users and fieldbus system)

Regarding Claim 4, Stevenson discloses when a predetermined time period has lapsed since the last log-on of one of the subscribers without a new log-on of one of the subscribers. (see Stevenson col. 25, lines 22-24; col. 10, lines 11-13: create subscriber link, event (i.e. threshold) management) Stevenson does not disclose a terminate procedure.

However, Eryurek discloses a method according to claim 1, wherein the central unit terminates the third phase. (see Eryurek col. 1, lines 46-47; col. 7,

lines 31-35; col. 9, lines 27-29: process control system, shutdown procedure when threshold parameters are met)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stevenson to utilize a shutdown (i.e. terminate) procedure when pre-determined conditions are met as taught by Eryurek. One of ordinary skill in the art would be motivated to employ Eryurek in order to implement event driven conditions utilizing complex models within a process control environment with limited power and resources. (see Eryurek col. 1, lines 39-43)

Regarding Claim 5, Stevenson discloses method according to claim 1, wherein the first value of the data transmission rate is a standard transmission rate and the second value corresponds to the target value of the fieldbus system. (see Stevenson col. 8, lines 53-60: at least two data transmission rates, 31.25 Kbits/s (i.e. standard rate), 1.0 Mbits/s or 2.5 Mbits/s (i.e. second or target rate))

Regarding Claim 6, Stevenson discloses a new subscriber being connected to the fieldbus and logs on at the central unit with this data transmission rate. (see Stevenson col. 3, lines 13-17; col. 25, lines 22-24: central unit fieldbus system, subscriber initiates a link (i.e. log on)) Stevenson does not disclose a detection mechanism.

However, Eryurek discloses method according to claim 1, wherein the capability to detect data transmission rate on fieldbus system and termination of the third phase. (see **Eryurek** col. 1, lines 46-47; col. 2, lines 42-53; col. 5, lines

59-62: process control system, detection mechanism to determine rules applied when threshold conditions are met) (see Eryurek col. 7, lines 31-35; col. 9, lines 27-29: shutdown procedure when threshold conditions are met)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stevenson to utilized detection mechanisms to determine rules implemented when threshold conditions are met as taught by Eryurek. One of ordinary skill in the art would be motivated to employ Eryurek in order to implement event driven conditions utilizing complex models within a process control environment with limited power and resources. (see **Eryurek** col. 1, lines 39-43)

Regarding Claim 9, Stevenson discloses fieldbus system according to claim 7, wherein the fieldbus is a serial bus. (see Stevenson col. 8, lines 1-7: a serial bus in fieldbus system)

Regarding Claim 10, Stevenson discloses fieldbus system according to claim 7, wherein the fieldbus is a CAN-bus. (see Stevenson col. 1, lines 38-49: a CAN bus in fieldbus system)

Regarding Claim 11, Stevenson discloses a fieldbus system with subscribers. (see Stevenson col. 3, lines 13-17; col. 15, lines 26-33: fieldbus system with subscribers) Stevenson does not disclose a detection capability or adjusting subscriber data transmission rate.

However, Eryurek discloses fieldbus system according to claim 7, wherein a detection device for detecting data transmission rate on fieldbus system. (see **Eryurek** col. 1, lines 46-47; col. 2, lines 42-53; col. 5, lines 59-62: process control system, detection mechanism to determine rules applied when threshold conditions are met) And, Gretta discloses adjusting subscriber data transmission rate. (see **Gretta** col. 4, lines 5-9; col. 4, lines 24-27: set data transmission rate for fieldbus system, configured utilizing configuration information)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stevenson to utilized detection mechanisms to implement rules when threshold conditions have been met as taught by Eryurek, and set data transmission rate on a fieldbus system as taught by Gretta. One of ordinary skill in the art would be motivated to employ Eryurek in order to implement event driven conditions utilizing complex models within a process control environment with limited power and resources (see **Eryurek** col. 1, lines 39-43), and employ Gretta in order to provide an improved user interface and simplified development for fieldbus software. (see **Gretta** col. 3, lines 34-36)

6. Claims 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevenson-Gretta-Eryurek and further in view of Kinney et al. (US Patent No. 6,501,995: filed June 30,1999).

Regarding Claim 7, Stevenson discloses fieldbus system for controlling safety-critical processes, comprising

a) a fieldbus to which at least one subscriber is connected, (see Stevenson col. 3, lines 13-17; col. 25, lines 22-24: fieldbus system with subscribers)

b) a central unit communicating with the subscribers via the fieldbus and having a switching device for centrally switching the data transmission rate on the fieldbus and at the subscribers from a first low value to a second higher value wherein the central unit comprises:

i) a first memory unit which stores the first and second values of the data transmission rate; (see Stevenson col. 9, lines 36-41: memory for device specific information)

ii) a second and a third memory unit for storing log-on data, the log-on data being supplied by the subscribers connected to the fieldbus; (see Stevenson col. 26, lines 31-38: subscriber link initiated (i.e. logon), subscriber information (i.e. supplied by subscribers)) stored

iii) Stevenson discloses event management for a central unit fieldbus system with stored log-on data. (see Stevenson col. 10, lines 11-13; col. 26, lines 31-38: subscriber information, event management) Stevenson does not disclose a comparator device or fieldbus shutdown procedure. However, Kinney discloses a comparator device which compares the log-on data stored in the second and the third memory unit to determine an inconsistency. (see **Kinney** col. 2, lines

36-38; col. 3, lines 5-10; col. 7, lines 2-12: process control system utilizing comparison mechanism) And, Eryurek discloses performing a shutdown of fieldbus system. (see **Eryurek** col. 1, lines 46-47; col. 7, lines 31-35; col. 9, lines 27-29: process control system, shutdown mechanism when pre-set rules are met)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stevenson to utilize a comparison mechanism in event processing as taught by **Kinney**, and to utilize a shutdown (i.e. terminate) mechanism when pre-determined set of conditions are met as taught by **Eryurek**. One of ordinary skill in the art would be motivated to employ Kinney in order to optimize efficient implementation of process control systems (see **Kinney** col. 2, lines 6-12: *" ... provide improved methods and apparatus that facilitate the distribution, installation and validation of control systems and components ... provide such methods and apparatus as facilitate the installation of components into active or on-line control systems ... "*), and employ Eryurek in order to implement event driven conditions utilizing complex models within a process control environment with limited power and resources. (see **Eryurek** col. 1, lines 39-43)

Regarding Claim 8, Stevenson discloses fieldbus system according to claim 7, wherein the central unit comprises event management procedures and a time measuring device. (see Stevenson col. 3, lines 13-17; col. 10, lines 11-13; col. 15, lines 34-43: centrally controlled fieldbus system utilizing event management

and time measurement) Stevenson does not disclose a comparator device. However, Kinney discloses wherein connected to the comparator device and the comparison after the lapse of a predetermined time period since the data transmission rate has been set to a higher value. (see Kinney col. 2, lines 36-38; col. 3, lines 5-10; col. 7, lines 2-12: process control system utilizing comparison mechanism (i.e. device))

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Stevenson to utilize a comparison mechanism in event processing within a process control system as taught by Kinney. One of ordinary skill in the art would be motivated to employ Kinney in order to optimize the efficient implementation of process control systems. (see Kinney col. 2, lines 6-12)

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyung H Shin whose telephone number is (571) 272-3920. The examiner can normally be reached on 9 am - 7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KHS

Kyung H Shin
Patent Examiner
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Mar. 22, 2005

William C. Vaughn
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